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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/054,246	01/23/2002	Kenneth J. Latimer JR.	102030-10-NP	3719

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EXAMINER
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ALBERTALLI, BRIAN LOUIS

ART UNIT	PAPER NUMBER
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2655

DATE MAILED: 01/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/054,246

Applicant(s)

LATIMER, KENNETH J.

Examiner

Brian L Albertalli

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 07 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 1/21/03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Specification***

1. The disclosure is objected to because of the following informalities: on page 11, line 29, "blasé" should be --blade--.

Appropriate correction is required.

### ***Claim Objections***

2. Independent claim 2 recites the limitation "said network" in lines 6-7 of the claim. There is insufficient antecedent basis for this limitation in the claim. The previous lines of the claim describe transmitting voice and Ethernet signals through a "network circuit", as in physical network card, but no reference is made to the entire network system as a whole. Accordingly, claims 6 and 7 are objected to for using the term "said network". For the purposes of examination the term "said network" has been interpreted herein as meaning the "network circuit" recited earlier in the claim.

3. Claim 6 is objected to because of the following informalities: in line 2 of the claim, "a defragmenting" should either be --a defragmenter--or --a defragmenting device--. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

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4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 2 and 6 are rejected under 35 U.S.C. 102(e) as being anticipated by Keenan et al. (U.S. Patent 6,577,631).

In regard to claim 2, Keenan et al. disclose a system (Fig. 2) capable of transporting voice and data signals over a network circuit (Fig. 3, Ethernet Switch Card 54); said network circuit having a line rate (10Base-T or 100Base-TX); said system comprising:

an Ethernet physical layer interface for connecting a Subscriber Premise Device (User Terminal Equipment (UTE) Adapters 46, 48, and 50) between an Ethernet LAN (Ethernet LAN segment 34) and said network circuit (Ethernet Switch Card 54) for providing packets representing Ethernet data signals to said network circuit (column 10, lines 16-20);

a telephone line interface (Analog POTS Port 39) for connecting standard telephone line equipment to said network circuit (column 10, lines 55-56); said telephone line interface containing a CODEC that digitizes the analog signals for transmission of packets to said network circuit (the Analog POTS Port 39 must inherently include a means for digitizing the analog telephone signal);

a fragmenting device containing a software algorithm (Ethernet Segmentation and Re-Assembly (SAR) Function 66) rendered effective by the presence of packets from said telephone line interface (if a device which is not a UTE providing packets of voice information, the packet is processed as a standard Ethernet data packet, column 11, lines 47-53) for fragmenting Ethernet data signals into labeled packets interspersed with said packets from said telephone line interface as it passes there through; said labeled packets having a fragment packet size determined by said line rate (Fig. 5 and Fig 7, the signals are segmented and grouped into Master Ethernet Packets at either a 10Base-T transmission rate, or a 100Base-TX transmission rate, column 22, lines 8-10 and 22-27; in Fig. 5, in the Type I transmission rate the constant bit rate (CBR) channel data bits, which are used to carry the voice data, are segmented into four blocks of 8 octet segments, column 22, lines 38-43; the user data are segmented and encapsulated between the four groups of CBR locations, column 22, line 66 to column 23, line 5; in Fig. 7, in the Type II transmission rate, one block of eight bytes is reserved immediately after the standard 14 byte Ethernet header, column 23, lines 22-25 and lines 30-32; the user data are segmented and encapsulated in a 1492 byte block immediately after the CBR block, lines 39-43; thus, the segmentation of the signals and the packet size depend on the line rate).

In regard to claim 6, Keenan et al. disclose a defragmenter connected to said network for receiving said fragmented packets and reconstructing said Ethernet packets

(SAR function 66 performs both segmentation and re-assembly, column 18, lines 50-54).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1 and 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keenan et al., in view of Humphrey et al. (*How xDSL Supports Broadband Services to the Home*).

In regard to claim 1, Keenan et al. disclose a system for transmitting voice and data signals over a network circuit comprising:

a customer premises extension device for receiving and transmitting voice and data signals (Fig. 3, user terminal equipment adapter 46 accepts and transmits voice signals from an analog POTS port 39 and data from a user PC work station 16, column 10, lines 50-56);

wherein said signals are fragmented in accordance with an associated transmission rate (Fig. 5 and Fig 7, the signals are segmented and grouped into Master Ethernet Packets at either a 10Base-T transmission rate, or a 100Base-TX transmission

rate, column 22, lines 22-27; in Fig. 5, in the Type I transmission rate the constant bit rate (CBR) channel data bits, which are used to carry the voice data, are segmented into four blocks of 8 octet segments, column 22, lines 38-43; the user data are segmented and encapsulated between the four groups of CBR locations, column 22, line 66 to column 23, line 5; in Fig. 7, in the Type II transmission rate, one block of eight bytes is reserved immediately after the standard 14 byte Ethernet header, column 23, lines 22-25 and lines 30-32; the user data are segmented and encapsulated in a 1492 byte block immediately after the CBR block, lines 39-43; thus, the segmentation of the signals and size of the packets depend on the transmission rate);

at least one subscriber loop operatively connected to said customer premises extension device (Fig. 2, WAN); and

a subscriber loop access component (Fig. 4, WAN Card 55) for receiving said voice and data signals and operatively connected to said subscriber loop (column 10, lines 36-37).

Keenan et al. do not explicitly disclose that the subscriber loop is a digital subscriber loop (DSL) service.

Humphrey et al. disclose that using DSL as a WAN service provides a low cost, high throughput, LAN-to-LAN connectivity (page 15, 5<sup>th</sup> paragraph).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Keenan et al. to replace the WAN Card with a DSL access component to provide access to the WAN through a DSL service, in order to provide a

low cost, high throughput, LAN to LAN connectivity, as taught by Humphrey et al. (page 15, 5<sup>th</sup> paragraph).

In regard to claims 3 and 5, Keenan et al. disclose that the fragmenting device (SAR function 66) operates on two different line rates (for Type I and Type II packet sizes, column 22, lines 8-10). Furthermore, Keenan et al. disclose that the placement of the CBR (voice) packets in the Master Ethernet Packets were chosen to accommodate the standard sampling rate of 8 kHz in digital communication systems ( $8\text{ kHz} \times 8\text{ bits per sample} = 64\text{ kbps}$ ). Still further, the size of the data packets for each line rate is disclosed, including the actual usable data payload when the segmenting overhead bytes are included (See Figs. 5-8)

Keenan et al. do not disclose that the fragment packet size is stored in a table of values, or that the packet size is chosen from the specific sizes listed in the table of claim 5.

Humphrey et al. disclose that DSL provides a large number of speed options (page 16, first column, lines 1-2) and that rate adaptive DSL technology can automatically detect the maximum line speed on a particular line and adjust the line speed accordingly (page 16, first column, second paragraph).

Humphrey et al. do not disclose the fragment packet size is stored in a table of values, or that the packet size is chosen from the specific sizes listed in the table of claim 5.

However, official notice is taken that it is notoriously well known and recognized in the art to store data that needs to be quickly accessed in a table, so that the calculations used to generate the tables do not need to be recalculated every time that data is needed.

Furthermore, regarding the specific line rates and packet sizes given in claim 5, official notice is taken that it is notoriously well known and recognized in the art how to calculate the amount of space left in a data stream for user data. Given high priority data that must be sent through the data stream at a constant rate, and a certain line rate, there is only so much "room" left for other low priority data. Accordingly, as the rate of the data stream increases, the amount of "room" for low priority data increases as well, which means the size of each low priority data packet increases as well.

Therefore, in view of the teachings of Keenan et al. and Humphrey et al., and further in view of common knowledge in the art, it would have been obvious to one of ordinary skill in the art at the time of invention to store any number of line rates and corresponding data packet sizes in a table, so that the system would be able to quickly respond to any changes in the line speed and adjust the data packet size accordingly.

In regard to claim 4, Keenan et al. disclose that the size of the fragment packet is chosen to ensure the packets from said telephone line can have an arrival rate of 64 kbps regardless of the network line speed or Ethernet traffic (the spacing of the reserved blocks is designed to accommodate the standard sampling rate of digital

telecommunication systems, column 22, lines 50-52; the source and destination points receiving the CBR information at a constant 64 kbps, column 16, lines 43-45).

8. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Keenan et al., in view of Engbersen et al. (U.S. Patent 5,271,000).

Keenan et al. do not disclose:

a first management device to send a test packet to said network circuit at a predetermined rate and

a second management device to receive and decode said test packets thereby measuring network transmission quality.

Engbersen et al. a network system for sending voice and data packets (column 13, lines 49-55) comprising:

a first management device to send a test packet to said network circuit at a predetermined rate (Fig. 12, transmitter hardware 24 provides test data repetitively from a FIFO, column 19, lines 52-56 and column 21, lines 9-11 and lines 50-56) and

a second management device to receive and decode said test packets thereby measuring network quality (receiver hardware 25 include a performance evaluation unit (Fig. 14, 41) that characterizes the functional behavior of the network, column 19, lines 52-56, column 22, lines 53-56, and column 24, lines 27-30).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Keenan et al. to include a first and second management device in the system, because there are well defined limitations on the length of delay in the

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transmission of voice packets, and performance tests measure the transit delay of successive packets, as taught by Engbersen et al. (column 7, lines 62-66 and column 20, lines 59-62), therefore the network could be tested to ensure that the network had an acceptable delay for voice transmission.

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Nelson et al. (U.S. Patent 4,587,651) disclose a switching system for voice and data that dynamically assigns time bit slots for the data. Weir, deceased et al. (U.S. Patent 4,707,831) disclose a system for sending voice and data over a data network that prioritizes the voice data in order to transmit the voice data in real time. Cohen (U.S. Patent 5,841,777) discloses a system for transmitting constant bit rate data and available bit rate data that dynamically adjusts time slots for each. Guy et al. (U.S. Patent 5,940,479) disclose a system that dynamically compensates for delays in a WAN. Doucette et al. (U.S. Patent 6,108,346) disclose a system that does not include asynchronous data packets in a frame until all the necessary voice data packets are sent. Gerszberg et al. (U.S. Patent 6,307,839) disclose a system that reduces bandwidth allocated to data to ensure voice data travels over the network at a constant rate. Long et al. (U.S. Patent 6,728,238) disclose a system that dynamically assigns voice and data channels in a TDM system. IBM Technical Disclosure (*Algorithm for Voice and Data Transmission in Hybrid Switches*) discloses a method for adjusting the packet size according to the data rate.

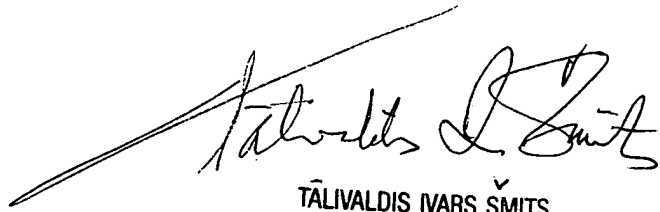
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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian L Albertalli whose telephone number is (703) 305-1817. The examiner can normally be reached on Mon - Fri, 8:00 AM - 5:30 PM, every second Fri off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Talivaldis Smits can be reached on (703) 305-3011. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BLA 1/12/05



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PRIMARY EXAMINER